VR 9/200.1/1946
c.1

COLORADO STATE PUBLICATIONS LIBRARY
ED1/10.2/P86/1985 c.2 local
nop, Ed/Profiles of non-metropolitan an
3 1799 00007 0995

JUL 21 1948
DOCUMENTS DIVISION
University of Colorado Libraries

TATE OF COLORADO

BUREAU OF MINES

State Capitol, Denver

FRED JONES, *Commissioner of Mines*

ANNUAL REPORT

for the Year 1946

APPROVED
STATE CONTROLLER

[illegible]

STATE OF COLORADO

BUREAU OF MINES

State Capitol, Denver

FRED JONES, *Commissioner of Mines*

ANNUAL REPORT

for the Year 1946

APPROVED
STATE CONTROLLER

1876

THE BRADFORD-ROBINSON PTG. CO., DENVER

TABLE OF CONTENTS

Page
Letter of transmittal 3
Personnel of Bureau of Mines 5
Districts of inspection 6
Mineral collection 7
Mining in Colorado in 1946 by Commissioner of Mines 10
Production summary 17
Historical note 18
Commissioners of Mines 18
Publications of Bureau of Mines 19
Fatal accidents, 1946 22
Accidents classified 1946 24

List of operating mines by counties as follows—
- Boulder 25
- Chaffee 25
- Clear Creek 26
- Conejos 26
- Costilla 27
- Custer 27
- Dolores 27
- Eagle 28
- Fremont 28
- Garfield 28
- Gilpin 29
- Gunnison 29
- Jackson 29
- Jefferson 29
- Lake 30
- La Plata 30
- Mineral 30
- Montezuma 30
- Montrose 31
- Ouray 31
- Park 32
- Pitkin 32
- Rio Grande 33
- Routt 33
- Saguache 33
- San Juan 34
- San Miguel 35
- Summit 35
- Teller 36

List of operating quarries and clay pits 38

List of operating mills and smelters 41

List of tunnels, dams and road work 42

List of operating placers 42

Operating oil shale plant 42

LETTER OF TRANSMITTAL

To His Excellency,
THE HONORABLE WILLIAM LEE KNOUS,
Governor of Colorado.

Sir: In compliance with Chapter 110, Section 285 of the Colorado Statutes Annotated 1935, I have the honor to transmit herewith the Annual Report of the State Bureau of Mines for the year 1946.

Respectfully submitted,

FRED JONES,
Commissioner of Mines.

State Capitol,
Denver, Colorado,
Aug. 20, 1947.

Digitized by the Internet Archive
in 2013

http://archive.org/details/annualreportfory00colo_18

PERSONNEL OF THE BUREAU OF MINES OF THE STATE OF COLORADO

FRED JONES, Commissioner of Mines	Denver
GEORGE BECKER, Inspector, District No. 1	Denver
FRED E. THEOBALD, Inspector, District No. 2	Canon City
R. J. MURRAY, Inspector, District No. 3	Salida
D. C. McNAUGHTON, Inspector, District No. 4	Silverton
ETHEL F. McCARTHY, Chief Clerk	Denver
MARGARET F. SMITH, Stenographer and Clerk	Denver
MARY A. PIPER, Stenographer	Denver

DISTRICTS OF INSPECTION

DISTRICT NO. 1—Adams, Arapahoe, Boulder, Clear Creek, Denver, Gilpin, Grand, Jackson, Jefferson, Larimer, Logan, Moffat, Morgan, Phillips, Routt, Sedgwick, Summit, Washington, Weld and Yuma counties.

DISTRICT NO. 2—Baca, Bent, Cheyenne, Crowley, Custer, Douglas, Elbert, El Paso, Fremont, Huerfano, Kiowa, Kit Carson, Las Animas, Lincoln, Otero, Park, Prowers, Pueblo and Teller counties.

DISTRICT NO. 3—Alamosa, Chaffee, Conejos, Costilla, Eagle, Garfield, Lake, Mineral, Pitkin, Rio Blanco and Rio Grande counties, and that portion of Saguache county lying south and east of the main Continental Divide, and the extreme northwest part of Gunnison county, lying north of the 39th degree of latitude.

DISTRICT NO. 4—Archuleta, Delta, Dolores, Hinsdale, La Plata, Mesa, Montezuma, Montrose, Ouray, San Juan and San Miguel counties and all of Gunnison county except the extreme northwest corner lying north of the 39th degree of latitude, also that part of Saguache county lying north and west of the main Continental Divide.

COLORADO STATE BUREAU OF MINES

OFFICES AND MINERAL COLLECTION

Entire Second Floor
MUSEUM BUILDING
14th Avenue and Sherman Street
Denver (2), Colorado

The mineral collection of the State Bureau of Mines originated through the efforts of the various Exposition Commissions. Material was assembled by them to illustrate the mineral resources of Colorado and ultimately these collections were turned over to the Bureau of Mines.

The purchase of the Elsner collection added further to the exhibit. For the last twenty years the mineral exhibit has been dependent upon gifts from mining men and people interested in the mining industry. At the present time the number of specimens totals over 11,000.

On the walls and over the cases are photographs and paintings of many mining towns and important mines of Colorado.

A complete catalogue of the specimens has been prepared as to species, donors, counties, mines and localities. In some cases analyses and assays, values per ton and statistical data are given.

The collection has a great deal of educational value. Classes from various schools in Denver and throughout the state visit the Museum yearly or oftener and many of the children show intense interest. Various club groups also study the minerals. Boys and girls, as well as some adults, start their collections from small duplicate specimens given them in the Museum.

As an advertising feature the Museum is important since over 100,000 people look over the exhibit yearly. These visitors come from every state in the Union and most of them are surprised at the number of ores and minerals that can be produced from Colorado mines and quarries. The collection is a great attraction and constantly growing in popularity.

Appreciation of the value of the collection is increasing among mining and scientific men. The Bureau of Mines has often been called upon to supply definite information concerning types of ore from certain mines. Since the new exhibits of present day operations have been added, many mining men have visited the Museum. The commercial ores on exhibition from every section of the state afford a good idea of the character of the ores found in Colorado. Prospectors have brought in material for comparison and we find that they are particularly interested in the county cases. There are 34 such cases which contain ores, minerals and rocks from various Colorado mining counties.

A number of rare minerals have been presented for purchase, but we are not in a position financially to buy these. A few hundred dollars would enable us to make purchases of specimens which now go to some other state.

The exhibit occupies three large rooms on the second floor of the Museum building. The middle room contains cases showing gold, silver, lead, copper, zinc and iron ores and also fluorspar and agates. During the past year cases of molybdenum and carnotite have been added. The Climax Molybdenum Company is the largest producer of molybdenum in the world. The carnotite cases contain high grade samples of carnotite and pitchblende ores.

A replica of the Pueblo Mineral Palace is shown in a special case. It contains small pieces of gold, silver, lead, copper and zinc, and various Colorado gems. The base and roof are native silver. It is of intricate design and we understand it took over two years to complete the model. It was presented to the Museum by the Women's Club of Pueblo and was displayed at the World's Fair in Chicago in 1893. Metals and minerals were donated by gold and silver mines of the state and the smelting companies of Pueblo. It was designed and made by Charles Otero, Pueblo.

A cast of a silver nugget found in the Mollie Gibson mine at Aspen, Colorado, attracts a good deal of attention. The nugget weighed 387 pounds and coined $6,630.00.

The east room contains a number of cases of non-metallics and rock making minerals. There are a great many requests for non-metallics at the present time and these cases are being consulted constantly. Interest in oil shale is increasing. We have on display samples of this material from the government oil shale plant in Garfield County, near Rifle, which will assay one barrel (42 gallons) of oil per ton. An excellent collection of 104 minerals was donated by the Florence H. Hotchkiss Estate of Delta, Colorado, through the efforts of Harry W. Gueno of Delta. This case has been greatly admired by many visitors to the Museum.

The west room is in the process of renovation. New dust-proof cases are being installed with sliding plate glass tops to hold the Colorado Scientific Society collection consisting of 777 specimens. This collection was donated to the State Bureau of Mines during 1946 and is to be designated as the "Colorado Scientific Society Collection." A number of rare Colorado and other minerals are in these cases. This room also contains cases of tungsten, manganese, nickel, mercury and tin ores.

In addition to the cases there are several drawers of igneous, sedimentary and metamorphic rocks which may be studied for purposes of comparison.

A great deal of attention has been given to the Museum during the last four years. Approximately 2,000 specimens have been added exclusive of the Colorado Scientific Society specimens. The number of cases has been increased by twelve.

A new fluorescent display has been added, which has proved a great attraction to the public.

The Commissioner of Mines and the inspectors during their visits to the operating metal mines, quarries, mills and smelters, often secure samples of ores and minerals which are placed in the collection for display.

For the Museum to remain up to date, constant additions must be made and we would appreciate receiving ores from mines, prospects and new developments. Gift certificates signed by the Governor and the Commissioner of Mines are sent out to donors of specimens. We ask for the further cooperation of the mining men of Colorado in obtaining specimens and increasing the quantity and quality of those we already have.

The Museum is located at 14th Avenue and Sherman Street, Denver, and is open to visitors every week day from 8:30 a. m. to 5 p. m., except Saturday when it is open from 9 a. m. to 12 noon. Mrs. Mary Piper is in charge of the exhibits and is always ready and willing to aid visitors.

ETHEL F. McCARTHY,
Chief Clerk.

MINING

1946

FRED JONES

Commissioner of Mines

Due to the scarcity of paper no complete annual reports were published in 1944 or 1945, only mimeographed lists of properties, accidents and productions were made available to the public. Now that the supply of paper is easier and provision has been made in the Bureau of Mines appropriation for the 1946 annual report, we will endeavor to print more of the important statistics concerning the production of minerals in the state, both metallic and nonmetallic.

The personnel of the Bureau has not changed for several years and all have been busy with the usual activities of the department, and also making preparation for the expected increase in mining activity in the state due to the cessation of World War II. May 8, 1945, V-E Day, saw the collapse of the German forces and September 2, 1945, V-J Day, the defeat of the Japanese war machine.

The famous Order L-208, which placed certain restrictions on the mining of gold and silver, went into effect October 8, 1942. Immediately a decrease in production for Colorado was noted in gold, silver and copper. Lead and zinc production increased in 1943 and then dropped back to normal. The total production in dollars for metals dropped steadily until L-208 was rescinded by President Truman on July 1, 1945. Production now gives promise of shortly reaching the prewar level.

The four inspectors made 345 inspections with complete reports and 1,121 inspections without reports. The office personnel wrote 832 Bureau of Mines letters and 429 letters for the State Geological Survey Board, and prepared and distributed 188 collections of small specimens characteristic of the state of Colorado. They also assisted some 2,400 applicants at the office to obtain information about mines and mining claims over the state. 330 specimens were tested for prospectors, either at the office, the School of Mines, or by Professor George at the State University at Boulder. The exact amounts of the minerals are not given the inquirer, but they are identified for him and he is told whether or not they are in commercial quantities.

Following is a list of all the mineral producing counties, their population, size, mineral production, number of mines, mills and quarries worked, with the average daily man shifts during 1946. A careful study of this list cannot help but impress the reader with the tremendous increase in the importance of the production of nonmetallics of the state.

Unfortunately the Bureau has not been able to include the production of vanadium and carnotite, due to the fact that the Federal Government has maintained strict secrecy concerning this production.

Adams County

Population, 21,389 Area, 1,247 Square Miles

11th county in production of Gold	576 ozs.
27th county in production of Silver	94 ozs.

The entire production obtained on Clear Creek in washing sand and gravel for building material.

29th county in total mineral production	$ 20,236.00

Boulder County

Population, 33,896 Area, 753 Square Miles

8th county in production of Gold	3,400 ozs.
17th county in production of Silver	10,052 ozs.
19th county in production of Copper	8,000 lbs.
14th county in production of Lead	136,000 lbs.
Fluorspar	$390,757.74
Tungsten	306,096.00
9th county in total mineral production	$840,096.00

Average daily man shifts—176 employed in 15 mines and 2 mills.

Chaffee County

Population, 7,191 Area, 1,039 Square Miles

13th county in production of Gold	412 ozs.
14th county in production of Silver	17,196 ozs.
9th county in production of Copper	78,000 lbs.
17th county in production of Lead	47,000 lbs.
9th county in production of Zinc	722,000 lbs.
Fluorspar	$553,015.14
Feldspar	34,477.00
Limestone	537,328.00
Granite	9,986.00
8th county in total mineral production	$1,268,963.14

Average daily man shifts—126 employed in 6 quarries, 1 placer, 6 mines and 2 mills.

Clear Creek County

Population, 2,454 Area, 394 Square Miles

7th county in production of Gold	3,696 ozs.
8th county in production of Silver	82,792 ozs.
12th county in production of Copper	38,000 lbs.
8th county in production of Lead	941,000 lbs.
14th county in production of Zinc	180,000 lbs.
15th county in total mineral production	$400,141.00

Average daily man shifts—198 employed in 1 mill and 21 mines.

Conejos County

Population, 9,537 Area, 1,271 Square Miles

Turquoise	$30,000.00
28th county in total mineral production	$30,000.00

Average daily man shifts—20 employed in one mine.

Custer County

Population, 1,578 Area, 737 Square Miles

22nd county in production of Gold	40	ozs.
12th county in production of Silver	25,724	ozs.
18th county in production of Copper	9,000	lbs.
12th county in production of Lead	445,000	lbs.
12th county in production of Zinc	356,000	lbs.
20th county in total mineral production	$115,580.00	

Average daily man shifts—34 employed in 6 mines.

Delta County

Population, 13,653 Area, 1,157 Square Miles

Sulphur	$12,500.00
33rd county in total mineral production	$12,500.00

Average daily man shifts—9 employed in one quarry

Dolores County

Population, 2,054 Area, 1,028 Square Miles

18th county in production of Gold	136	ozs.
6th county in production of Silver	173,297	ozs.
4th county in production of Copper	223,000	lbs.
4th county in production of Lead	4,351,000	lbs.
4th county in production of Zinc	6,870,000	lbs.
6th county in total mineral production	$1,493,309.00	

Average daily man shifts—206 employed in 11 mines.

Douglas County

Population, 3,044 Area, 843 Square Miles

26th county in production of Gold	1	oz.
Limestone	$ 2,406.00	
Clay	39,945.00	
Silica Sand	4,627.50	
25th county in total mineral production	$47,013.50	

Average daily man shifts—17 employed in 5 quarries

Eagle County

Population, 4,546 Area, 1,685 Square Miles

16th county in production of Gold	164	ozs.
9th county in production of Silver	57,364	ozs.
15th county in production of Copper	17,000	lbs.
7th county in production of Lead	1,380,000	lbs.
1st county in production of Zinc	32,873,000	lbs.
2nd county in total mineral production	$4,215,770.00	

Average daily man shifts—327 employed in 2 mines.

El Paso County

Population, 61,234 Area, 2,158 Square Miles

Limestone	$16,548.66
Silica Sand	1,141.45
Clay	167.00
31st county in total mineral production	$17,857.11

Average daily man shifts—164 employed in 4 quarries and 2 mills.

Fremont County

Population, 17,352 Area, 1,562 Square Miles

23rd county in production of Gold	19 ozs.
21st county in production of Silver	2,182 ozs.
14th county in production of Copper	30,000 lbs.
18th county in production of Lead	36,000 lbs.
13th county in production of Zinc	226,000 lbs.
Limestone	$324,814.65
Feldspar and Mica	72,442.74
Gypsum	54,546.95
Silica	23,576.00
Sandstone	15,200.00
Clay	38,552.00
Travertine	63,732.00
Marble	13,938.00
12th county in total mineral production	$645,586.34

Average daily man shifts—480 employed in 35 quarries, 3 mines and 3 mills.

Garfield County

Population, 9,253 Area, 2,994 Square Miles

27th county in production of Gold	1 oz.
22nd county in production of Silver	1,756 ozs.
19th county in production of Lead	35,000 lbs.
15th county in production of Zinc	110,000 lbs.
Limestone	$17,775.00
Volcanic Ash	3,600.00
26th county in total mineral production	**$40,064.00**

Average daily man shifts—198 employed in 2 quarries, 1 mill and 4 mines.

Gilpin County

Population, 799 Area, 149 Square Miles

14th county in production of Gold	348 ozs.
19th county in production of Silver	3,334 ozs.
20th county in production of Copper	5,000 lbs.
16th county in production of Lead	118,000 lbs.
16th county in production of Zinc	57,000 lbs.
27th county in total mineral production	$35,500.00

Average daily man shifts—44 employed in 5 mines.

Gunnison County

Population, 4,592 Area, 3,242 Square Miles

17th county in production of Gold	145 ozs.
16th county in production of Silver	15,203 ozs.
11th county in production of Copper	40,000 lbs.
9th county in production of Lead	778,000 lbs.
8th county in production of Zinc	885,000 lbs.
Feldspar	$18,750.00
17th county in total mineral production	$235,361.00

Average daily man shifts—97 employed in 1 quarry, 1 placer and 9 mines.

Hinsdale County

Population, 209 Area, 1,057 Square Miles

25th county in production of Gold	3 ozs.
24th county in production of Silver	442 ozs.
21st county in production of Copper	4,000 lbs.
37th county in total mineral production	$1,110.00

Jackson County

Population, 1,727 Area, 1,623 Square Miles

Fluorspar	$8,995.35
34th county in total mineral production	$8,995.35

Average daily man shifts—8 employed in 1 mine.

Jefferson County

Population, 34,053 Area, 786 Square Miles

20th county in production of Gold	92 ozs.
23rd county in production of Silver	850 ozs
8th county in production of Copper	83,000 lbs.
Clay	$140,288.49
Crushed Rock	124,035.00
16th county in total mineral production	$281,676.49

Average daily man shifts—764 employed in 1 mine and 9 quarries and plants.

Lake County

Population, 7,809 Area, 380 Square Miles

5th county in production of Gold	10,780 ozs.
4th county in production of Silver	332,472 ozs.
6th county in production of Copper	195,000 lbs.
1st county in production of Lead	8,883,000 lbs.
2nd county in production of Zinc	11,992,000 lbs.
Molybdenum	$8,774,200.00
1st county in total mineral production	$11,882,998.00

Average daily man shifts—888 employed in 1 placer, 5 mills and 11 mines.

La Plata County

Population, 11,820 Area, 1,689 Square Miles

12th county in production of Gold	548 ozs.
25th county in production of Silver	360 ozs.
30th county in total mineral production	$19,471.00

Average daily man shifts—3 employed in 1 mine.

Larimer County

Population, 30,170 Area, 2,619 Square Miles

Limestone	$126,453.41
Gypsum	352,738.00
Alabaster	5,000.00
14th county in total mineral production	$484,191.41

Average daily man shifts—207 employed in 5 quarries and 1 cement plant.

Las Animas County

Population, 25,980 Area, 4,794 Square Miles

Clay	$60,000.00
23rd county in total mineral production	$60,000.00

Mineral County

Population, 625 Area, 921 Square Miles

15th county in production of Gold	175 ozs.
3rd county in production of Silver	355,110 ozs.
10th county in production of Copper	61,000 lbs.
10th county in production of Lead	492,000 lbs.
19th county in production of Zinc	6,000 lbs.
Fluorspar	$254,092.00
13th county in total mineral production	$611,388.00

Average daily man shifts—85 employed in 3 mines.

Montezuma County

Population, 7,858 Area, 2,095 Square Miles

19th county in production of Gold	142 ozs.
26th county in production of Silver	344 ozs.
35th county in total mineral production	$5,248.00

Average daily man shifts—5 men employed in 1 mine.

Montrose County

Population, 12,795 Area, 2,239 Square Miles

24th county in production of Gold	18 ozs.
13th county in production of Silver	23,307 ozs.
3rd county in production of Copper	292,000 lbs.
22nd county in total mineral production	$66,766.00

Average daily man shifts—67 employed in 1 mill and 10 mines.

Otero County

Population, 24,311 Area, 1,267 Square Miles

Alabaster	$14,131.08
32nd county in total mineral production	$14,131.08

Average daily man shifts—12 employed in 1 quarry.

Ouray County

Population, 1,720 Area, 540 Square Miles

6th county in production of Gold	8,504 ozs.
5th county in production of Silver	194,297 ozs.
5th county in production of Copper	199,000 lbs.
6th county in production of Lead	1,743,000 lbs.
7th county in production of Zinc	1,247,000 lbs.
10th county in total mineral production	$828,991.00

Average daily man shifts—389 employed in 13 mines and 2 mills.

Park County

Population, 1,771 Area, 2,166 Square Miles

3rd county in production of Gold	20,088 ozs.
15th county in production of Silver	15,995 ozs.

16th county in production of Copper	17,000 lbs.
15th county in production of Lead	122,000 lbs.
10th county in production of Zinc	683,000 lbs.
11th county in total mineral production	$815,382.00

Average daily man shifts—110 employed in 10 mines, 3 placers and 1 mill.

Pitkin County

Population, 1,202 Area, 974 Square Miles

28th county in production of Gold	1 oz.
10th county in production of Silver	41,630 ozs.
13th county in production of Lead	215,000 lbs.
17th county in production of Zinc	18,000 lbs.
24th county in total mineral production	$59,303.00

Average daily man shifts—21 employed in 2 mines.

Pueblo County

Population, 73,268 Area, 2,401 Square Miles

Limestone	$40,129.00
Clay	87,635.35
Silica	5,250.00
Scrap Steel	59,321.00
18th county in total mineral production	$192,335.35

Average daily man shifts—212 employed in 13 quarries and 1 mill.

Rio Grande County

Population, 11,395 Area, 916 Square Miles

9th county in production of Gold	1,834 ozs.
20th county in production of Silver	2,338 ozs.
17th county in production of Copper	14,000 lbs.
21st county in total mineral production	$68,347.00

Average daily man shifts—21 employed in 1 mine.

Routt County

Population, 8,344 Area, 2,330 Square Miles

28th county in production of Silver	63 ozs.
18th county in production of Zinc	14,000 lbs.
36th county in total mineral production	$1,759.00

1 mine.

Saguache County

Population, 4,661 Area, 3,144 Square Miles

21st county in production of Gold	57 ozs.
11th county in production of Silver	28,396 ozs.
7th county in production of Copper	86,000 lbs.
11th county in production of Lead	478,000 lbs.
11th county in production of Zinc	480,000 lbs.
19th county in total mineral production	$149,533.00

Average daily man shifts—39 employed in 10 mines.

San Juan County

Population, 1,049 Area, 392 Square Miles

4th county in production of Gold	17,396	ozs.
1st county in production of Silver	361,328	ozs.
2nd county in production of Copper	757,000	lbs.
2nd county in production of Lead	7,084,000	lbs.
6th county in production of Zinc	3,757,000	lbs.
4th county in total mineral production	$2,253,957.00	

Average daily man shifts—287 employed in 20 mines and 1 mill.

San Miguel County

Population, 2,106 Area, 1,283 Square Miles

2nd county in production of Gold	24,730	ozs.
2nd county in production of Silver	358,443	ozs.
1st county in production of Copper	1,321,000	lbs.
3rd county in production of Lead	4,762,000	lbs.
5th county in production of Zinc	3,925,000	lbs.
3rd county in total mineral production	$2,367,082.00	

Average daily man shifts—264 employed in 9 mines.

Summit County

Population, 1,124 Area, 615 Square Miles

10th county in production of Gold	1,667	ozs.
7th county in production of Silver	128,246	ozs.
13th county in production of Copper	31,000	lbs.
5th county in production of Lead	2,026,000	lbs.
3rd county in production of Zinc	7,293,000	lbs.
7th county in total mineral production	$1,277,570.00	

Average daily man shifts—116 employed in 12 mines

Teller County

Population, 2,616 Area, 544 Square Miles

1st county in production of Gold	47,640	ozs.
18th county in production of Silver	7,536	ozs.
5th county in total mineral production	$1,673,489.00	

Average daily man shifts—462 employed in 1 mill and 42 mines.

In addition to the above mentioned men the following were employed:

Denver—Cadmium Smelter and Feldspar Plant	134
Oil Shale	85
Road Work and Tunnels	952

MINE PRODUCTION OF GOLD, SILVER, COPPER, LEAD, AND ZINC IN COLORADO IN 1946

Gold	Fine ounces	142,613
Silver	Fine ounces	2,240,151
Copper	Pounds	3,508,000
Lead	Pounds	34,072,000
Zinc	Pounds	72,294,000
Total Value		$19,903,509

HISTORICAL NOTE

The Bureau of Mines of the State of Colorado was established by an act of the Tenth General Assembly, approved March 30, 1895. This act repealed a previous act creating an ''Inspector of Metalliferous Mines,'' which was passed in 1889. The Bureau of Mines law established the office of Commissioner of Mines, provided for in the State Constitution, and charged him, among other things, with the supervision of metal mine inspection and the enforcement of laws relating to safety and health in metal mines. Subsequently this was broadened to include ''any ore mill, sampling works, smelter, metallurgical plant, rock quarry, clay pit, railroad tunnel, rock excavation or mine of whatsoever kind or character except coal mines.'' The Commissioner of Mines was also charged ''as he has opportunity and means'' to collect mineral specimens and exhibit the same, to collect books relating to mining and geology, to collect and preserve data regarding mining methods, mining costs, milling, metallurgy, geology, mineral deposits of all kinds, and so on. Aside from the purchase of the Elsner collection of minerals, very little ''opportunity and means'' has been granted to the Commissioners for anything except inspection work. A strong effort is being made at this time not only to make mining as near absolutely safe as possible but to help and encourage it in every legitimate way possible. The present activities of the Bureau of Mines are treated elsewhere in this report.

COMMISSIONERS OF MINES

Harry A. Lee	May 11, 1895-May 10, 1903
E. L. White	May 10, 1903-May 10, 1907
T. J. Dalzell	May 10, 1907-May 10, 1911
T. R. Henahen	May 10, 1911-May 10, 1915
Fred Carroll	May 10, 1915-June 1, 1919
Horace F. Lunt	June 1, 1919-June 1, 1923
John T. Joyce	June 1, 1923-June 1, 1927
John T. Joyce	June 1, 1927-June 1, 1931
John T. Joyce	June 1, 1931-June 1, 1935
John T. Joyce	June 1, 1935-June 12, 1939
Edward P. Arthur	June 12, 1939-Aug. 26, 1943
Fred Jones	Sept. 27, 1943

PUBLICATIONS OF THE BUREAU OF MINES

BULLETINS

Bulletin No. 1, Recommendations for Safety Appliance in Mining, Harry A. Lee, Commissioner of Mines, 1896.

Bulletin No. 2, Precious Metal Production for the Year 1898, Harry A. Lee, Commissioner of Mines, 1899.

Bulletin No. 3, Mining Laws, Relative to Bureau of Mines Precious Metal Production, Harry A. Lee, Commissioner of Mines, 1899.

Bulletin No. 4, Precious Metal Production, Harry A. Lee, Commissioner of Mines, 1901.

Bulletin No. 5, Precious Metal Production, Harry A. Lee, Commissioner of Mines, 1902.

Bulletin No. 6, Regulations Relative to the Construction, Equipment and Operation of Metalliferous Mines, Mills and Metallurgical Plants, Recommendations and Mineral Production for 1905, E. L. White, Commissioner of Mines, 1906.

Bulletin No. 7, Federal and State Laws Relating to Mining, Fred Carroll, Commissioner of Mines, 1916.

Supplement to Bulletin No. 7, Mining Laws Enacted by the Twenty-first General Assembly, Fred Carroll, Commissioner of Mines, 1917.

Supplement No. 2 to Bulletin No. 7, Amendments to the Mining Laws Enacted by the Twenty-second General Assembly, Horace F. Lunt, Commissioner of Mines, 1919.

Supplement No. 3 to Bulletin No. 7, Amendments to Laws Relating to Mining Enacted by the Twenty-third General Assembly, Horace F. Lunt, Commissioner of Mines, 1921.

Supplement No. 4 to Bulletin No. 7, Amendments to Laws Relating to Mining Enacted by the Twenty-fourth General Assembly, Horace F. Lunt, Commissioner of Mines, 1923.

Bulletin No. 8, The Oil Shales of Northwestern Colorado, Horace F. Lunt, Commissioner of Mines, 1919.

Bulletin No. 9, Mine Safety Standards, Horace F. Lunt, Commissioner of Mines, 1920. Out of print, now embraced in Bulletin No. 11.

Bulletin No. 11, Federal and State Laws Relating to Mining, John T. Joyce, Commissioner of Mines, 1931.

Bulletin No. 12, Mining Laws of Colorado, Edward P. Arthur, Commissioner of Mines, 1942.

Bulletin No. 13, Mining Laws of Colorado, Fred Jones, Commissioner of Mines, 1946.

REPORTS

Report of Bureau of Mines, Colorado, from its establishment in May, 1895, to November 30, 1896, Harry A. Lee, Commissioner of Mines, 1896.

Report for the Year, 1897, Harry A. Lee, Commissioner of Mines, 1898.

Report for the Year 1898, Harry A. Lee, Commissioner of Mines, 1899.

Biennial Report for the Years 1899-1900, Harry A. Lee, Commissioner of Mines, 1900.

Biennial Report for the years 1901-1902, Harry A. Lee, Commissioner of Mines, 1903.

Biennial Report for the Years 1903-1904, E. L. White, Commissioner of Mines, 1905.

Biennial Report for the Years 1905-1906, E. L. White, Commissioner of Mines, 1907.

Biennial Report for the Years 1907-1908, T. J. Dalzell, Commissioner of Mines, 1909.

Biennial Report for the Years 1909-1910, T. J. Dalzell, Commissioner of Mines, 1911.

Biennial Report for the Years 1911-1912, T. R. Henahen, Commissioner of Mines, 1913.

Biennial Report for the Years 1913-1914, T. R. Henahen, Commissioner of Mines, 1914.

Biennial Report for the Years 1915-1916, Fred Carroll, Commissioner of Mines, 1916.

Biennial Report for the Years 1917-1918, Fred Carroll, Commissioner of Mines, 1919.

Annual Report for the Year 1919, Horace F. Lunt, Commissioner of Mines, 1920.

Annual Report for the Year 1920, Horace F. Lunt, Commissioner of Mines, 1921.

Annual Report for the Year 1921, Horace F. Lunt, Commissioner of Mines, 1922.

Annual Report for the Year 1922, Horace F. Lunt, Commissioner of Mines, 1923.

Annual Report for the Year, 1923, John T. Joyce, Commissioner of Mines, 1924.

Annual Report for the Year 1924, John T. Joyce, Commissioner of Mines, 1925.

Annual Report for the Year 1925 was fully prepared but because of lack of funds was not printed. The manuscript is on file in the office of the State Bureau of Mines.

Annual Report for the Year 1926, John T. Joyce, Commissioner of Mines, 1927.

Annual Report for the Year 1927, John T. Joyce, Commissioner of Mines, 1928.

Annual Report for the Year 1928, John T. Joyce, Commissioner of Mines, 1929.

Annual Report for the Year, 1929, John T. Joyce, Commissioner of Mines, 1930.

Annual Report for the Year 1930, John T. Joyce, Commissioner of Mines, 1931.

Annual report for the Year, 1931, John T. Joyce, Commissioner of Mines, 1932.

Annual Report for the Year 1932, John T. Joyce, Commissioner of Mines, 1933.

Annual Report for the Year 1933, John T. Joyce, Commissioner of Mines, 1934.

Annual Report for the Year 1934, John T. Joyce, Commissioner of Mines, 1935.

Annual Report for the Year 1935, John T. Joyce, Commissioner of Mines, 1936.

Owing to lack of funds the 1936 Annual Report of the State Bureau of Mines was not published.

Annual Report for the Year 1937, John T. Joyce, Commissioner of Mines, 1938.

Owing to lack of funds the 1938 Annual Report of the State Bureau of Mines was not published.

Annual Report for the Year 1939, Edward P. Arthur, Commissioner of Mines, 1940.

Annual Report for the Year 1941, Edward P. Arthur, Commissioner of Mines, 1942.

Annual Report for the Years 1942 and 1943, Fred Jones, Commissioner of Mines, 1944.

List of Mines for the Year 1944, Fred Jones, Commissioner of Mines, 1945.

List of Mines for the Year 1945, Fred Jones, Commissioner of Mines, 1946.

At the time this report goes to press, there are available for distribution copies of the Annual Reports for 1921, 1922, 1928, 1932 and 1941. The 1929, 1930, 1931, 1933, 1934, 1935, 1937, 1939, 1942 and 1943 Annual Reports are out of print. The publications not mentioned in this paragraph are exhausted, but copies may be consulted in many of the public, state and college libraries throughout the country.

Note—The Colorado Geological Survey has published a number of geological reports and maps, a list of which may be obtained from the head of the Geology Department of the University of Colorado, Boulder, Colorado.

FATAL ACCIDENTS, 1946

Underground

February 15, Fred Medina of Del Norte, age 24, married, mucker, employed by The Colorado Fuel and Iron Corporation, Wagon Wheel Gap, Colorado, came to his death when he fell down 303 raise, a distance of 120 feet. Medina died the following day, February 16, 1946. Unavoidable accident.

April 19, Carl Sanstrom of Aspen, age 51, married, miner, employed by the Midnight Mining Company, Aspen, came to his death when he was killed by fall of rocks when pulling a filled stope through grizzly on the 8th level. Unavoidable accident.

June 6, Steve E. Lauer of Telluride, age 27, single, miner, employed by Telluride Mines, Inc., Telluride, died when he slipped and fell 125 feet in No. 34 raise to the North Main Level of the Montana Group. Accidental.

September 25, Hugh Stanley Knowlton, age 42, miner, employed by the Mountain Queen lease of Silverton, came to his death by being caught in a blast because he finished spitting the round of holes with his lamp after the spitter had gone out. His body was removed early in the morning of September 23. Carelessness of injured.

October 19, James P. Leary of Leadville, age 44, single, timberman, employed by the Resurrection Mining Company, Leadville, came to his death from gas fumes in a lateral. Death was instantaneous. Carelessness of injured.

Surface

March 30, William A. Martin of Silverton, age 31, married, hoist operator, employed by Pride of West., Inc., Silverton, came to his death by jumping 50 to 60 feet to snow-covered ground from skip of single-carrier jig-back tramway. He was riding on this when coming off shift. Martin was killed instantly. Violation of safety rule and failure to use safety device.

Mill

December 22, Russell David Hull of Ouray, age 18, married, mill helper, employed by the American Zinc Lead and Smelting Company, Ouray, Colorado, came to his death by falling into scoop feed box of ball mill. Scoop tip caught left leg, pulling it from hip joint and taking it through feed box. The accident happened about 10:30 a. m. and Hull died in the hospital at 11 a. m. Inexperience and carelessness of injured.

December 24, James Travison of Leadville, age 26, married. mill shift boss, employed by the Resurrection Mining Company, Leadville, died of suffocation in an ore bin after going to the rescue of one of the workmen who failed to use the necessary safety device. Violation of safety rule.

December 28, William King, of Leadville, age 61, married, shift boss, employed by the John Hamm Mining and Milling, Ltd., of Leadville, was attempting to locate an unusual noise in the jig, as if something was broken, when his overall jumper pocket was caught in the sprocket on the jack shaft of the jig. He died from the effects of a badly mangled arm and leg the following day in the hospital. Carelessness of injured.

DAYS OF EMPLOYMENT IN AND ABOUT MINES, MILLS, SMELTERS, QUARRIES AND PLACERS AND NUMBER OF MEN KILLED AND INJURED PER 10,000 DAYS OF EMPLOYMENT DURING THE YEAR 1946.

		Fatal		Partial Disability		Time Lost Over 14 Days		Time Lost Under 14 Days	
1946	Days of Employment	No. of Acci-dents	Rate Per 10,000 Days	No. of Acci-dents	Rate Per 10,000 Days	No. of Acci-dents	Rate Per 10,000 Days	No. of Acci-dents	Rate Per 10,000 Days
Underground	563,166	5	.0887	5	.0887	124	2.202	261	4.634
Surface	222,085	1	.0450	..	....	18	.8105	58	2.611
Mills	313,180	3	.0957	3	.0957	13	.4151	33	1.054
Smelters	66,255	..	....	..	....	7	1.056	5	.7548
Quarries	429,972	..	....	..	....	21	.4884	23	.5349
Placers	7,608	..	....	..	....	...	....	6	7.886

Note: This table does not include the men employed in tunnels, road work, dams, etc.

LIST OF OPERATING MINES IN VARIOUS COUNTIES IN COLORADO

OPERATING MINES IN BOULDER COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Argo and Emmett (m)	Jamestown	Harry M. Williamson & Son	728 U. S. Nat'l Bank Bldg., Denver 2	Fluorspar
Bighorn	Gold Hill	Carl Egle & James Pastora	4616 Alcott St., Denver 11	Gold, Silver,
Black Cloud	Gold Hill	The Slide Mines, Inc.	401 Security Bldg., Denver 2	Gold, Silver, Lead, Zinc
Blue Bird (m)	Nederland	Great Western Gold and Silver Mines Corp.	Nederland	Gold, Silver, Lead, Copper
Burlington (m)	Jamestown	General Chemical Co.	40 Rector St., New York City 6, New York	Fluorspar
Comstock	Nederland	Pandora Metals, Inc.	220 E & C Bldg., Denver 2	Silver, Lead, Zinc
Emancipation	Boulder	Harrison Cobb	401 Pine St., Boulder	Gold, Silver
Emmett & Wano Mill	Jamestown	Harry M. Williamson & Co.	728 U.S. Nat'l Bank Bldg., Denver 2	Fluorspar
Henna	Gold Hill	Henna Mines, Inc.	2224 15th St., Boulder	Gold, Silver
Hoosier Extension (m)	Nederland	Elmer Hetzer & Associates	1563 Mapleton St., Boulder	Tungsten
Hurricane	Nederland	Firth Sterling Steel & Carbide Corp., Wolf Tongue Division	310 First Nat'l Bank Bldg., Boulder	Tungsten
John Jay	Jamestown	Earl Craig	1027 Pine St., Boulder	Gold, Silver
Little Johnny	Boulder	Aaron Stromberg & W. R. Griswald	1910 Grove St., Boulder	Gold, Silver, Lead
Smoky Gold United	Ward	Risden Eng. & Mng. Co.	Box 325, Boulder	Gold, Silver, Lead
Smuggler	Lyons	G. H. Renfro & Associates	3130 9th St., Boulder	Gold, Silver

(m) Mill operated in connection with mine.

OPERATING MINES IN CHAFFEE COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Browns Canon	Browns Canon	General Chemical Company	40 Rector St., New York City	Fluorspar
Colorado Fluorspar (m)	Browns Canon	Colorado Fluorspar Mines, Inc.	Box 311, Salida	Fluorspar
Garfield	Taylor Gulch	S. E. Burleson	120 W. 2nd St., Salida	Silver, Copper, Zinc
Iron Chest	Buena Vista	Howard Crandall	% Clayton Coal Company, Denham Bldg., Denver 2	
Madonna	Monarch	The Utze Lode Company	Box 500, Salida	Silver, Lead
U. S. Fluorspar (m)	Manganese Hill	United States Fluorspar, Inc.	Salida	Fluorspar

OPERATING MINES IN CLEAR CREEK COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Ajax	Idaho Springs	Winburn Development Company	1120 Pearl St., Denver 3	Mica
Ben Harrison	Idaho Springs	Harrison-Croesus Mining Co.	2939 Wyandot St., Denver 11	Gold, Silver, Lead, Zinc
Dixie (m)	Idaho Springs	LeRoy Giles & Company	Idaho Springs	Gold, Silver
Franklin	Idaho Springs	Franklin Mining Company, Inc.	Idaho Springs	Gold, Silver, Lead, Zinc
Gilt Edge	Idaho Springs	Gilt Edge Mng. & Mlg. Co.	Idaho Springs	Gold, Silver
Gold Fissure	Empire	P. M. Leasors	Box 401, Idaho Springs	Gold, Silver, Copper
Grizzly Gulch	Silver Plume	Lupton Mining Company, Inc.	Georgetown	Gold, Silver, Lead, Zinc
Jo Reynolds	Lawson	L. J. Robineau & Stephen Sperlack	Box 111, Dumont	Gold, Silver, Lead
Lombard	Idaho Springs	Lombard Mng. & Mlg. Company	Box 131, Idaho Springs	Gold, Silver
Mendota (m)	Silver Plume	The Utze Lode Company	Box 500, Salida	Gold, Silver, Lead, Zinc
Mint	Empire	Mint Mine	425 16th St., Denver 2	Gold, Silver
New Boston (m)	Georgetown	Lupton Mining Company, Inc.	Georgetown	Gold, Silver, Lead, Zinc
Old Settler	Idaho Springs	McClelland Leasing Company	470 Clarkson St., Denver 13	Gold, Silver
Red Elephant	Lawson	Red Elephant Metals, Inc.	Idaho Springs	Gold, Silver, Lead, Zinc
Royal Ann Mines	Idaho Springs	Royal Ann Mines, Inc.	237 Temple Court Bldg., Denver 2	
Silver Age (m)	Idaho Springs	Joseph P. Ruth	1437 Blake St., Denver 2	Gold, Silver, Lead, Zinc
Silver King	Dumont	Arthur V. Portenier & Assoc.	Idaho Springs	Gold, Silver, Lead, Zinc
Smuggler (m)	Silver Plume	Smuggler Mines	1901 Lawrence St., Denver 2	Gold, Silver, Lead, Zinc
Terrible-Dunderberg	Silver Plume	Gold Mines Cons., Inc.	Central City	Gold, Silver, Lead Zinc
Urad (m)	Empire	Molybdenum Corp. of America	500 5th Ave., New York, N. Y.	Molybdenum
Williams (m)	Idaho Springs	H. L. Hunt	Mercantile Bank Bldg., Dallas, Texas	Gold, Silver

OPERATING MINE IN CONEJOS COUNTY, 1946

Name of Mine		Operator	P. O. Address	Character of Product
King Turquoise	Manassa	Wallace and Horace King	Manassa	Turquoise

OPERATING MINE IN COSTILLA COUNTY, 1946

Name of Mine	Location		P. O. Address	Character of Product
Rito Seco	San Luis	Rito Seco Mng. & Mlg. Company	San Luis, Colorado	Gold

OPERATING MINES IN CUSTER COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Crescent	Ophir Creek	Aiken and Decker	Florence	Gold
Defender	Westcliffe	Henning, Kettle and Walker	Westcliffe	Silver, Lead
First Iowa	Westcliffe	Jack Best	Box 55, Silver Cliff	Silver, Lead
Keystone	Westcliffe	Dick Colgate and Wm. Hoge	Silver Cliff	Gold, Silver, Lead Zinc
Lady Franklin	Westcliffe	Geo. L. and Arthur B. Beardsley	500 Penrose Bldg., Colo. Spgs.	Silver, Lead, Zinc
Quist Vermiculite	Near DeWeese Dam	Quist & Skaggs	921 N. 9th St., Canon City	Vermiculite

OPERATING MINES IN DOLORES COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Atlantic Cable	Rico	Rico Argentine Mining Company	132 S. Main St., Salt Lake City, Utah	Gold, Silver, Copper, Lead, Zinc
Graysill	Rico	The Vanadium Corp. of America	420 Lexington Ave., New York City	Vanadium
Larson	Rico	Rico Argentine Mining Company	132 S. Main St., Salt Lake City, Utah	Gold, Silver, Copper, Lead, Zinc
Mountain Springs	Rico	Rico Argentine Mining Company	132 S. Main St., Salt Lake City, Utah	Gold, Silver, Copper, Lead, Zinc
Nora Lily	Rico	Rico Argentine Mining Company	132 S. Main St., Salt Lake City, Utah	
Pro Patria	Rico	Rico Argentine Mining Company	132 S. Main St., Salt Lake City, Utah	Gold, Silver, Copper, Lead, Zinc
Revenue	Rico	Rico Argentine Mining Company	132 S. Main St., Salt Lake City, Utah	Gold, Silver, Copper, Lead, Zinc

OPERATING MINES IN DOLORES COUNTY, 1946—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Rico Argentine (m)	Rico	Rico Argentine Mining Company	132 S. Main St., Salt Lake City, Utah	Gold, Silver, Copper, Lead, Zinc
St. Louis	Rico	Rico Argentine Mining Company	132 S. Main St., Salt Lake City, Utah	Gold, Silver, Copper, Lead, Zinc
Van Winkle	Rico	Rico Argentine Mining Company	132 S. Main St., Salt Lake City, Utah	Gold, Silver, Copper, Lead, Zinc
Yellow Jacket	Rico	Rico Argentine Mining Company	132 S. Main St., Salt Lake City, Utah	Gold, Silver, Copper, Lead, Zinc

OPERATING MINES IN EAGLE COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Eagle Mines (m)	Gilman	The New Jersey Zinc Company, Empire Zinc Division	160 Front St., New York City	Gold, Silver, Copper, Lead, Zinc
Tip Top	Belden Canon	Frank McDonald & Assoc.	Redcliff	Gold

OPERATING MINES IN FREMONT COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Gumaer	Cotopaxi	Monarch Galena Company	Cotopaxi	Gold, Silver, Copper, Lead, Zinc
Horseshoe	Grape Creek	Horseshoe Mining Company	Box 668, Canon City	Lead, Zinc
Isabell	Tallahassee Creek	Warwick Mining Company	c/o T. H. Sackett, Canon City	Silver, Lead, Copper, Zinc

OPERATING MINES IN GARFIELD COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Garfield	Rifle Creek	Joe E. Pitts	Rifle	Vanadium
Grand View	Rifle	Birney, Fisher & Wool	Rifle	Lead
Gray Eagle	Newcastle	Gray Eagle Mining Company	c/o H. H. Wallower, Evergreen	Gold
Rifle Creek	East Rifle Creek	U. S. Vanadium Corp.	30 E. 42nd St., New York City 17	Vanadium

OPERATING MINES IN GILPIN COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Boodle (m)	Central City	Lowell Griffith & Assoc.	Idaho Springs	Silver, Lead, Zinc
Federal (m)	Central City	J. M. Throuvenell	Central City	Gold, Silver
Pittsburgh (m)	Central City	Success Gold Mng. Co., Inc.	Central City	Gold, Silver, Lead, Copper
Powers	Central City	Lu Ev Mining Co.	Idaho Springs	Gold, Silver
West Notaway	Central City	Neeper & Company	Idaho Springs	Gold, Silver, Lead, Copper

OPERATING MINES IN GUNNISON COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Akron	Sargents	Callahan Zinc-Lead Company	9 Rockefeller Plaza, New York City	Silver, Copper, Lead, Zinc
Brown Derby (m)	Ohio	Hayden Mining Company	Box 1071, Colorado Springs	Lepidolite, Microlite, Beryl, etc.
Bull Domingo	Gunnison	Jack A. McLain	Parlin	Silver, Lead, Zinc
Carter	Ohio	Colo. Fluorspar Mines, Inc.	Box 311, Salida	Gold, Silver, Lead
Crystal Mt.	Marble	Crystal Mt. Lodes, Inc.	1032 Spitzer Bldg., Toledo, O.	Lead, Zinc
Erie	Sargents	Callahan Zinc-Lead Co.	9 Rockefeller Plaza, New York City	Silver, Copper, Lead, Zinc.
Forest Queen	Irwin	Forest Queen Mines	Crested Butte	Gold, Silver, Copper, Lead
Raymond	Ohio City	Ore & Chemical Corporation	Leadville	Gold, Silver
Star	Gunnison	John Lambertson	Box 567, Gunnison	Silver, Lead, Zinc

OPERATING MINE IN JACKSON COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Crystal Fluorspar	Walden	Crystal Fluorspar Mines Co.	610 Calif. Bldg., Denver 2	Fluorspar

OPERATING MINE IN JEFFERSON COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Malachite (m)	Golden	Gregory Moore & Assoc.	Idaho Springs	Gold, Silver, Copper

OPERATING MINES IN LAKE COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Breece Lease	Leadville	John Joyce	208 E. 4th St., Leadville	Silver, Lead
Climax	Fremont Pass	Climax Molybdenum Company	500 5th Ave., New York City	Molybdenum
Dolly B	Big Evans Gulch	Jack McCaughen	Leadville	Lead
Forbes	Big Evans Gulch	Mike Bonan	215 W. 6th St., Leadville	Silver, Lead
Garbutt	Leadville	American Smelt. & Ref. Co.	120 Broadway, New York City	Gold, Silver Lead, Copper, Zinc
Garibaldi	California Gulch	Jones and Nylene	Box 592, Leadville	Gold, Silver, Lead, Zinc
Ibex	Jonny Hill	The Ibex Mining Company	118 W. 3rd St., Leadville	Gold, Silver, Lead, Copper, Zinc
Matchless No. 6	Fryer Hill	Thomas Nixon & Assoc.	1241 Lincoln St., Denver 3	
Purple Top	Leadville	Turnipseed Lease	412 11th St., Glenwood Spgs.	
Resurrection	Big Evans Gulch	Resurrection Mining Company	14 Wall St., New York City 5	Gold, Silver, Copper, Lead, Zinc
Valley	Big Evans Gulch	Harry Sundstrom & Co.	Box 266, Leadville	Gold, Silver, Copper, Lead, Zinc

OPERATING MINE IN LA PLATA COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Idaho	Hesperus	Melvin Schoser	Durango	Gold, Silver

OPERATING MINES IN MINERAL COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Emperius Operations (m)	Creede	Emperius Mining Company	Creede	Silver
Solomon	Creede	New Ridge Mining Company	Creede	Gold, Silver, Lead, Copper
Wagon Wheel Gap (m)	W. Wheel Gap	The Colo. Fuel & Iron Corp.	Continental Oil Building, Denver 2	Fluorspar

OPERATING MINE IN MONTEZUMA COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Red Arrow	Mancos	Ute Mining Company	Box 560, Durango	Gold, Silver, Lead

OPERATING MINES IN MONTROSE COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Charcter of Product
Maggie C.	Uravan	Vanadium Corp. of America	420 Lexington Ave., New York City	Vanadium, Carnotite
New Cashin	Paradox	O. C. Hanson	Heber, Utah	Gold, Silver, Copper
North Star	Uravan	Vanadium Corp. of America	420 Lexington Ave., New York City	Vanadium, Carnotite
Primos, Buckeye, Happy Jack, Raven, Butterfly, Little Alice	Naturita	Vanadium Corp. of America	420 Lexington Ave., New York City	Vanadium, Carnotite
Republican	Naturita	Vanadium Corp. of America	420 Lexington Ave., New York City	Carnotite, Vanadium

OPERATING MINES IN OURAY COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Bachelor Lease	Ouray	American Zinc, Lead & Smelting Co.	1600 Paul Brown Bldg., St. Louis, Missouri	Gold, Silver, Copper, Lead, Zinc
Genessee-Vanderbilt and Joker Tunnel	Ouray	American Smelting & Refining Co.	120 Broadway, New York City 5	Gold, Silver, Copper, Lead, Zinc
Ida L.	Ouray	Harry E. Larson	Box 55, Ouray	Gold, Silver, Lead, Copper, Zinc
Idarado (m)	Ouray	Idarado Mining Co.	14 Wall St., New York City 5	Gold, Silver, Copper, Lead, Zinc
King Lease (m)	Ouray	The King Lease, Inc.	Ouray	Gold, Silver, Lead, Copper
Michael Breen	Ouray	F. C. Liebhart & Assoc.	Ouray	Silver, Copper, Lead, Zinc
New Ruby	Ouray	Emil Leonardi & Assoc.	Ouray	Gold, Silver
Portland	Ouray	Amer. Zinc, Lead & Smelting Co.	1600 Paul Brown Bldg., St. Louis, Missouri	Gold Silver, Copper, Lead, Zinc

OPERATING MINES IN OURAY COUNTY, 1946—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
San Antonio	Ouray	Amer. Zinc, Lead & Smelting Co.	1600 Paul Brown Bldg., St. Louis, Missouri	Gold, Silver, Copper, Lead, Zinc
Sonza Lease on Bachelor	Ouray	J. R. Sonza & Assoc.	Ouray	Gold, Silver, Copper, Lead, Zinc
Sonza Lease on Syracuse	Ouray	J. R. Sonza & Assoc.	Ouray	Gold, Silver, Copper, Lead, Zinc
Virginius	Ouray	The Virginius Mines Company	Ouray	Gold, Silver, Lead, Zinc

OPERATING MINES IN PARK COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Betty	Guffey	The Betty Mining Company	Guffey	Gold, Silver, Copper, Zinc
Buckskin Joe	Buckskin Gulch	Buckskin Joe Mines, Ltd.	Alma	Gold, Silver, Lead, Zinc
Criterion	Alma	Criterion Mining Co., c/o C. C. Browning	Alma	Gold, Silver, Lead
Evening Star, Lee Goss and Columbia	Mosquito Gulch	Weston Lease	Box 123, Alma	
Hock Hocking	Mosquito Gulch	R. M. Taylor	Box 123, Alma	Gold, Silver, Lead, Zinc
Little Ruby	Weston Pass	Harry J. Johnson & Assoc.	Nathrop	Gold, Silver, Lead, Zinc
Magnolia	Hoosier Pass	Magnolia Gold Mining Co.	Alma	Gold, Silver, Lead
Mineral Park	Mt. Bross	Rolph H. Luckenback	702 First Nat'l Bank Bldg., Denver 2	Gold, Silver, Lead, Zinc
Orphan Boy	Mosquito Gulch	M. J. Krolicki	704 U. S. Nat'l Bank Bldg., Denver 2	Gold, Silver, Lead, Zinc
Sweet Home	Buckskin Gulch	Niagara Mines, Ltd.	Alma	Gold, Silver, Lead, Zinc

OPERATING MINES IN PITKIN COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Midnight	Queens Gulch	Midnight Mining Company	Aspen	Silver, Lead, Zinc
Number 2	Aspen	Herron Bros.	Aspen	Silver, Lead

OPERATING MINE IN RIO GRANDE COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Summitville	Summitville	Ben Poxson, Geo. Garrey and Charles Green	Summitville	Gold

OPERATING MINE IN ROUTT COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Greenville	Clark	M. G. Franz	Clark	Silver, Lead, Zinc

OPERATING MINES IN SAGUACHE COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Beryl	Moffat	Lee Head & Assoc.	Salida	Fluorspar
Burlington	Bonanza	Smith and Eubank	Bonanza	Silver, Lead, Copper
Cora	Bonanza	Nevada Mines Co.; c/o Walter Timney	Bonanza	Silver, Zinc
Empress Josephine	Bonanza	Marvisa Mining Co.	2686 Newland St., Denver 14	Silver, Lead, Zinc
Erie and Superior	Bonanza	Superior Mines Division, Conejos Corporation	704 Equitable Bldg., Denver 2	Gold, Silver, Lead, Copper, Zinc
Hall Turquoise	Villa Grove	Al Hall	Aztec, New Mexico	Turquoise
Rawley Nos. 2 and 3	Bonanza	Costello Lease	Bonanza	Silver, Lead Copper, Zinc
St. Louis	Copper Gulch	Pratt-Bonanza Mng. & Mlg. Co., Inc.	Bonanza	Silver, Lead, Copper, Zinc
Silver Creek	Silver Creek	Silver Creek Mining Company	1322 G St., Salida	Silver, Lead, Zinc
Warwick	Bonanza	Nick Kesserich	Poncha Blvd., Salida	Silver, Lead, Copper, Zinc

OPERATING MINES IN SAN JUAN COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Esmeralda	Silverton	Esmeralda Lease	Silverton	Gold, Silver, Lead, Copper
Foursome	Silverton	Foursome Mining Company	Silverton	Gold, Silver, Copper, Lead, Zinc
Good Hope	Silverton	Cornelius & Brinkerhoff	Silverton	Gold, Silver, Lead
Great Divide	Silverton	Great Divide Mng. & Mlg. Corp.	Silverton	Gold, Silver, Copper, Lead, Zinc
Highland Mary (m)	Silverton	Highland Mary Mines, Inc.	Silverton	Gold, Copper, Silver, Lead
Lark	Silverton	U. S. Coal Corp.	429 C. A. Johnson Bldg., Denver 2	Gold, Silver, Copper, Lead, Zinc
Lead Carbonate	Silverton	H. P. Ehrlinger & Assoc.	Silverton	Gold, Silver, Copper, Lead, Zinc
Mohawk	Silverton	Nelson & Hill	Silverton	Manganese
Molas	Silverton	Joseph M. Gross	900 So. Sierra Bonita, Los Angeles, Calif.	Gold, Silver, Copper, Lead
Mountain Queen	Silverton	Mountain Queen Lease c/o A. R. Walker	Silverton	Gold, Silver, Copper, Lead
Old Green Mountain	Silverton	Denver Equipment Co.	1400 17th St., Denver 2	Gold, Silver, Copper, Lead, Zinc
Osceola Lease on New Green Mounain	Silverton	O. L. Larson & Assoc.	Silverton	Gold, Silver, Copper, Lead, Zinc
Pride of West (m)	Silverton	Denver Equipment Co.	1400 17th St., Denver 2	Gold, Silver, Copper, Lead, Zinc
San Antonio	Silverton & Ouray	American Zinc, Lead & Smelting Co.	1600 Paul Brown Bldg., St. Louis, Mo.	Gold, Silver, Copper, Lead, Zinc
Shenandoah-Dives (m)	Silverton	Shenandoah-Dives Mining Co.	616 Finance Bldg., 1009 Baltimore Ave., Kansas City, Missouri	Gold, Silver, Copper, Lead, Zinc
Silver Crown	Silverton	Smith Crane	Box 453, Silverton	Gold, Silver, Copper, Lead, Zinc
Silver Lake	Silverton	Shenandoah-Dives Mining Co.	616 Finance Bldg., 1009 Baltimore Ave., Kansas City, Missouri	Gold, Silver, Copper, Lead, Zinc

Toltec No. 3	Eureka	Grover C. Stout	412 First Nat. Bank Bldg., Grand Junction	Gold, Silver, Copper, Lead, Zinc
Topaz	Silverton	J. F. Farmer & Assoc.	Silverton	Gold, Silver, Copper, Lead
Treasure Mountain	Eureka	Treasure Mt. Gold Mining Co.	501 Midland Savings Bldg., Denver 2	Gold, Silver

OPERATING MINES IN SAN MIGUEL COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Alta (m)	Ophir	Alta Mines, Inc.	1022 First Nat. Bank Bldg., Denver 2	Gold, Silver, Copper, Lead, Zinc
Bear Creek	Telluride	Vanadium Corp. of America	420 Lexington Ave., New York City	Vanadium
Commercial	Telluride	Chas. N. Fairlamb & Assoc.	Telluride	Gold
Liberty Bell	Telluride	F. W. Anderson	4435 W. 50th Ave., Denver 12	Gold, Silver, Lead, Copper
Silver Bell (m)	Telluride	Silver Bell Mines Company	448 Equitable Bldg., Denver 2	Gold, Silver, Copper, Lead, Zinc
Silver Pick and Special Session	Telluride	Campbell & Black	Placerville	Gold, Silver, Copper, Lead
Sulphurette	Ophir Loop	Dan Roth	Telluride	Gold, Silver, Copper, Lead
Telluride (m)	Telluride	Telluride Mines, Inc.	Telluride	Gold, Silver, Copper, Lead, Zinc
Yellow Bird	Naturita	Vanadium Corp. of America	420 Lexington Ave., New York City	Carnotite

OPERATING MINES IN SUMMIT COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Big Four	Kremmling	Mrs. Frances L. McDaniel	Kremmling	Gold, Silver, Lead, Zinc, Copper
Country Boy (m)	Breckenridge	Garvie London Gold Mng. Co.	617 Cooper Bldg., Denver 2	Gold, Silver, Lead, Zinc
Diamond Jack	Breckenridge	Karl Horn and Assoc.	934 8th St., Boulder	Gold, Silver
Erickson	Dillon	Jeffrey-Ulibarri	Montezuma	Silver, Lead, Zinc
Ida Belle	Dillon	Max L. Bunker & Assoc.	Dillon	Gold, Silver, Lead, Zinc

OPERATING MINES IN SUMMIT COUNTY, 1946—Continued

Name of Mine	Location	Operator	P. O. Address	Character of Product
Kimberley	Kokomo	Kimberley Mines, Inc.	301 E & C Bldg., Denver 2	Gold, Silver, Lead, Zinc
Last Dollar	Breckenridge	Francis Renshaw & Assoc.	Box 9, Basalt, Colorado	Gold, Silver
Little Fool	Breckenridge	F. O. Daines & Assoc.	Breckenridge	Gold, Silver,
Shoe Basin	Montezuma	Pennsylvania Gold & Silver Mines, Inc.	911 Midland Savings Bldg., Denver	Gold, Silver, Lead, Zinc
Sally Barber	Breckenridge	F. P. Lilley and T. C. Moran	Box 1498, Denver	Silver, Lead, Zinc, Copper
Wilfley	Kokomo	Wilfley Leasing Company	633 U. S. Nat. Bank Bldg., Denver	Gold, Silver, Lead, Zinc
Victory	Kokomo	American Smelting & Refining Co.	120 Broadway, New York City	Gold, Silver, Lead, Zinc

OPERATING MINES IN TELLER COUNTY, 1946

Name of Mine	Location	Operator	P. O. Address	Character of Product
Ajax	Battle Mountain	Golden Cycle Corp.	Carlton Bldg., Colorado Spgs.	Gold
Anaconda	Anaconda Gulch	LeClair Cons. Mines Company	Carlton Bldg., Colorado Spgs.	Gold
Anchoria Leland and Goodwill	Gold Hill	Golden Cycle Corp.	Carlton Bldg., Colorado Spgs.	Gold
Anna J.	Bull Hill	W. R. and E. J. Hall	Box 56, Victor	Gold
Blocks 219 and 239	Battle Mountain	Schisler and Hartman	Victor	Gold
Clark	Gold Hill	Jess Stanton	Cripple Creek	Gold
Commonwealth	Beacon Hill	Inskeep & Polkinhorn	Victor	Gold
Cresson	Victor	Cresson Cons. Gold Mng. & Mlg. Co.	Box 86, Colorado Springs	Gold
Deadwood	Bull Hill	Stoner & McConochie	Cripple Creek	Gold
El Paso	Guyot and Beacon Hill	El Paso Mines, Inc.	Box 394, Cripple Creek	Gold
Empire & Saunders	Bull Hill	Empire Lee Mining Company	Carlton Bldg., Colorado Spgs.	Gold
Favorite	Bull Hill	Roger Conrow	Cripple Creek	Gold
Flying Cloud	Bull Hill	Champion Mines Co.	941 Monroe St., Denver 6	Gold
Frink & Adams No. 1	Gillette	Mrs. Ethel Studley	1311 Cheyenne Blvd., Colorado Springs	Gold

Geneva	Globe Hill	L. S. Cox and J. J. Van Horn	Cripple Creek	Gold
Glorietta	Bull Hill	United Gold Mines Company	Box 86, Colorado Springs	Gold
Gold King	Tenderfoot Hill	Gold King Mining Synd. Corp.	229 Rockland Ave., Syracuse, N. Y.	Gold
Goodwill	Gold Hill	Grudisher and Co.	Cripple Creek	Gold
Grace Greenwood	Gold Hill	Gold Hill Leasing Company	Cripple Creek	Gold
Granite and Dillon Dumps	Battle Mountain	Golden Cycle Corp.	Carlton Bldg., Colorado Spgs.	Gold
Jay Bird	Bull Hill	Gerald H. Anderson	Victor	Gold
Jerry Johnson	Ironclad Hill	Jerry Johnson Gold Mining Co.	Box 86, Colorado Springs	Gold
Jo Dandy	Raven Hill	Gold Mines Cons., Inc.	317 Colo. Bldg., Denver 2	Gold
Logan	Bull Hill	A. B. Cobb	Cripple Creek	Gold
Misc. Operations	Victor	The United Gold Mines Co.	Box 86, Colorado Springs	Gold
Mountain Monarch	Anaconda Gulch	Smith-Moffat Mines Co.	First Nat. Bank Bldg., Denver 2, c/o E. W. Anderson	Gold
Orpha May	Bull Hill	Jerry Muzik	Cripple Creek	Gold
Patti Rosa	Ironclad Hill	The Oro Mining Company	514 Equitable Bldg., Denver 2	Gold
Pharmacist	Bull Hill	C. E. Joslin & Assoc.	Victor	Gold
Pinto	Bull Hill	The Free Coinage Gold Mng. Co.	716 No. Wahsatch Ave., Colorado Springs	Gold
Portland Nos. 1 and 2	Battle Mountain	The United Gold Mines Company	Box 86, Colorado Springs	Gold
Proper	Globe Hill	Shamrock Mining Company	810 Midland Savings Bldg., Denver 2	Gold
Sexton	Bull Hill	Peterson & Kness	Cripple Creek	Gold
South Burns and Acacia	Bull Hil	The Free Coinage Gold Mines Co. and Acacia Gold Mining Co.	716 No. Wahsatch Ave., Colorado Springs	Gold
Specimen	Bull Hill	Gerald Thomas	Victor	Gold
Strong	Victor	Front Range Mines, Inc.	826 Continental Oil Bldg., Denver 2	Gold
Tornado	Raven Hill	The Elkton Company	Box 86, Colorado Springs	Gold
Vindicator	Independence	The United Gold Mines Company	Box 86, Colorado Springs	Gold
W.P.H.	Ironclad Hill	Champion Mines Co.	941 Monroe St., Denver 6	Gold
Wedge Shaft	Raven Hill	Wedge Lease, c/o Guy Rorabaugh	Cripple Creek	Gold
Wild Horse	Bull Hill	Wild Horse Leasing Co.	Cripple Creek	Gold

OPERATING QUARRIES AND CLAY PITS, 1946

Town	County	Name	Product	Operator	Address
Salida	Chaffee	Bowen	Granite	John Hershberger & Assoc.	Salida
Cameron Mountain	Chaffee	Midwest	Granite	Midwestern Granite Co.	314 Sackett Ave., Salida
Monarch	Chaffee	Monarch	Limestone	Colo. Fuel & Iron Corp.	Pueblo
Salida	Chaffee	Turret Feldspar	Feldspar	M & S Inc.	1333 W. Maple Ave., Denver 9
Salida	Chaffee	Warner Granite	Granite	J. N. Warner	Salida
Ute Trail, Salida	Chaffee	Winburn	Limestone	G. L. Winburn	Salida
Delta	Delta	Gapoo	Sulphur	General Agricultural Products Company	Box 608, Delta
Silica	Douglas	Helmer Fire Clay	Fire Clay	T. L. Helmer	Rte. 1, Box 94, Littleton
Silica	Douglas	Helmer Grinding Plant	Sand, Limestone	T. L. Helmer	Rte. 1, Box 94, Littleton
Silica	Douglas	Helmer Lime	Limestone	T. L. Helmer	Rte. 1, Box 94, Littleton
Silica	Douglas	Helmer Sand	White and Yellow Sand	T. L. Helmer	Rte. 1, Box 94, Littleton
Castle Rock	Douglas	Johnson Clay	Plastic Clay	Stroud Weisenhunt	Castle Rock
Husted	El Paso	Hecla Clay	Plastic Clay	The Standard Fire Brick Co.	24th and Albany Sts., Pueblo
Colorado Springs	El Paso	Lennox Breed	Limestone	Golden Cycle Corp.	Carlton Bldg., Colorado Spgs.
Manitou Springs	El Paso	Manitou Lime Plant	Limestone	Golden Cycle Corp.	Carlton Bldg., Colorado Spgs
Husted	El Paso	McLeod Ranch Sand Pit	Silica Sand	T. L. Helmer	Rte. 1, Box 94, Littleton
Canon City	Fremont	Alnea	Fire Clay	Mrs. May C. Riede	Canon City
Royal Gorge	Fremont	Border No. 2	Feldspar	Shipley & Waxon	Canon City
Canon City	Fremont	Burnito Ganister	Ganister	Ray B. Sturbaum	225 Main St., Canon City
Canon City	Fremont	Burnito Sand	Silica Sand	Ray B. Sturbaum	225 Main St., Canon City
Canon City	Fremont	C. F. & I. Ganister	Ganister	The Colo. Fuel & Iron Corp.	Pueblo
Howard	Fremont	Calcite No. 4	Limestone	The Colo. Limestone Co.	Box 8, Howard
Canon City	Fremont	Climax Clay	Fire Clay	Pioneer Brick Works	309 So. 11th St., Canon City
Coaldale	Fremont	Coaldale Gypsum	Gypsum	The Colo. Limestone Co.	Box 8, Howard
Canon City	Fremont	Colorosa Travertine	Travertine	Colonna & Co. of Colo., Inc.	Box 387, Canon City
Canon City	Fremont	Cowan Bros. Travertine	Travertine	Cowan Bros.	227 Main St., Canon City
Canon City	Fremont	Deer Hill	Fire Clay	The Diamond Fire Brick Co.	Canon City
Canon City	Fremont	Diamond Fire Brick Plant	Fire Clay	The Diamond Fire Brick Co.	Canon City
Canon City	Fremont	Dolomite	Dolomite	The Colo. Fuel & Iron Corp.	Pueblo
Oak Creek Mt.	Fremont	Eggleston	Monumental Stone	Willis Eggleston	Cotopaxi
Grape Creek Road	Fremont	Ganister	Silica	The Diamond Fire Brick Co.	Canon City
Canon City	Fremont	Garden Park and Shaw Park	Fire Clay	The Diamond Fire Brick Co.	Canon City
Canon City	Fremont	Goat Hill	Silica	The Diamond Fire Brick Co.	Canon City

Oak Creek Mt.	Fremont	Imperial Gray	Monumental Stone	V. D. Coleman & Co., Inc.	105 N. Cedar St., Colo. Spgs.
Whitehorn Mt.	Fremont	Marrs Memorial Blue	Granite	Marrs' Memorials	Box 43, Cotopaxi
8-Mile Park	Fremont	Mica Hill Lode	Mica, Beryl, Feldspar	Robert A. Shipley	731 Main St., Canon City
Wellsville	Fremont	Mountain State	Marble	Mountain States Marble Co.	Box 605, Salida
8-mile Park	Fremont	Myers	Feldspar	The Colo. Feldspar Co.	Canon City
Canon City	Fremont	Pig Back Shale	Shale	The Diamond Fire Brick Co.	Canon City
Portland	Fremont	Portland	Limestone, Shale	Ideal Cement Company	Denver Nat. Bldg., Denver 2
Portland	Fremont	Portland Cement Plant	Cement, Plaster	Ideal Cement Company	Denver Nat. Bldg., Denver 2
Wellsville	Fremont	Rogers Wellsville	Limestone	The Colo. Limestone Co.	Box 8, Howard
Parkdale	Fremont	Royal Park	Silica Rock	Dale Hoover and Assoc.	Parkdale
Canon City	Fremont	Sand Gulch	Silica Rock	Dale Hoover and Assoc.	Parkdale
8-mile Park	Fremont	School Section	Feldspar, Mica	The Colo. Feldspar Co.	Canon City
Florence	Fremont	Senatore	Gypsum	The Colo. Portland Cement Company	507 Denver Nat. Bldg., Denver
Parkdale	Fremont	Spikebuck	Feldspar, Mica	M. & S. Inc.	1333 W. Maple Ave., Denver 9
Canon City	Fremont	Swastika	Fire Clay	The Diamond Fire Brick Co.	Canon City
Wellsville	Fremont	Taylor Gulch	Limestone	Frank H. Norberg Co.	703 U. S. Nat'l Bank Bldg., Denver 2
Canon City	Fremont	Trail Gulch Placer	Red Marble	Colonna & Co. of Colo., Inc.	Canon City, Box 387
Wellsville	Fremont	Travertine	Travertine	Frank H. Norberg Co.	703 U. S. Nat. Bank Bldg., Denver 2
Glenwood Springs	Garfield	Glenwood	Limestone	Frank H. Norberg Co.	703 U. S. Nat. Bank Bldg., Denver 2
Dotsero	Garfield	Volcanic Ash	Volcanic Ash	Barnes & Crockett	Rifle
Sapinero	Gunnison	Colorado Feldspar	Feldspar	The Colo. Feldspar Co.	Canon City
Golden	Jefferson	Coors Clay Mines & Porcelain Plant	Clay	Coors Porcelain Co.	Golden
Golden	Jefferson	Fire Clay	Clay	Grant Parfet	Golden
Golden	Jefferson	Golden Clay Mines & Brick Plant	Clay	The Golden Fire Brick Co.	Box 292, Golden
Golden & Denver	Jefferson	Johnson Clay Mine & Brick Plant	Clay	Denver Sewer Pipe and Clay Co.	4501 Fox St., Denver 16, P. O. Box 2329
Golden	Jefferson	Lindsay Clay	Clay	George W. Lindsay	Box 1107, Denver 1
Golden	Jefferson	North Clay Mine & Brick Plant	Clay	The Denver Fire Clay Co.	2301 Blake St., Denver 2
Golden	Jefferson	Rockwell	Clay	Geo. W. Parfet Est., Inc.	Box 266, Golden
Golden	Jefferson	Rubey Clay	Clay	The H. M. Rubey Clay Co.	Box 266, Golden

OPERATING QUARRIES AND CLAY PITS, 1946—Continued

Town	County	Name	Product	Operator	Address
Golden	Jefferson	South Table Mt. Rock	Crushed Rock	City and County of Denver, Highway Dept.	801 Larimer St., Denver 4
Laporte	Larimer	Alabaster Quarry and Art Shop	Alabaster	Douglass and Stubbs	Box 436, Fort Collins
Laporte	Larimer	Boettcher Cement Quarries and Mill	Limestone	Ideal Cement Company	Denver Nat'l Bldg., Denver 2
Laporte	Larimer	Clark Quarries	Limestone	Clark Quarries, Inc.	Box 503, Fort Collins
Laporte	Larimer	Gypsum	Gypsum	S. H. Roberts & Assoc.	Laporte
Loveland	Larimer	U. S. Gypsum Quarries and Plant	Gypsum	U. S. Gypsum Company	300 W. Adams, Chicago, 6, Ill.
Trinidad	Las Animas	Trinidad Brick & Tile Co.	Fire Brick, Tile, Building Brick	Trinidad Brick & Tile Co.	Trinidad
La Junta	Otero	Alabaster	Alabaster	Colo. Alabaster Co.	720 W. 6th St., La Junta
Beulah	Pueblo	Beulah	Limestone	Frank H. Norberg Co.	703 U. S. Nat'l Bank Bldg., Denver 2
Lime	Pueblo	C. F. & I. Clay Pit	Fire Clay	The Colo. Fuel & Iron Corp.	Pueblo
So. Pueblo	Pueblo	C. F. & I. Dump	Scrap Steel	Interstate Eng. & Mch. Co. and Minnequa Salvage Co.	60 Broad St., New York City, Box 1332, Pueblo
Lime	Pueblo	C. F. & I. Lime	Limestone	The Colo. Fuel & Iron Corp.	Pueblo
Stone City	Pueblo	Nellie Helen	Fire Clay	Arthur L. Wands	Stone City
Pueblo	Pueblo	Rock Creek Clay	Fire Clay	The Standard Fire Brick Co.	24th and Albany, Pueblo
Stone City	Pueblo	Spring Canon	Fire Clay	Pueblo Clay Products Co.	542 Thatcher Bldg., Pueblo
Pueblo	Pueblo	Standard Fire Brick Plant	Fire Brick, Tile, Soil Pipe	The Standard Fire Brick Co.	24th and Albany, Pueblo
Stone City	Pueblo	Stone City	Fire Clay	Pueblo Clay Products Co.	542 Thatcher Bldg., Pueblo
Stone City	Pueblo	Stone City Rock	Silica Rock	Pueblo Clay Products Co.	542 Thatcher Bldg., Pueblo
Pueblo	Pueblo	Summit Brick Plant	Building Brick and Tile	The Summit Pressed Brick and Tile Company	13th and Erie, Pueblo
Mustang	Pueblo	Vulcan Clay	Fire Clay	The Standard Fire Brick Co.	24th and Albany, Pueblo
Stone City	Pueblo	Walker Mine	Fire Clay	Pueblo Clay Products Co.	542 Thatcher Bldg., Pueblo

OPERATING MILLS AND SMELTERS, 1946

Character of Plant	Town	County	Operator	Address
Boulder Tungsten Mills	Nederland	Boulder	Boulder Tungsten Mills, Inc.	Box 35, Boulder
Wano Fluorspar	Jamestown	Boulder	Ozark-Mahoning Company	Tulsa, Oklahoma
Calcium	Salida	Chaffee	The Calcium Co.	Salida
Monarch Mineral Products	Salida	Chaffee	Monarch Mineral Products Co.	Box 1071, Colorado Springs
Silver Spruce	Idaho Springs	Clear Creek	Silver Spruce Gold Mng. Co.	Idaho Springs
Arsenic and Cadmium Refinery	Denver	Denver	American Smelting & Refining Company	120 Broadway, New York City
Western Feldspar	Denver	Denver	Western Feldspar Milling Co.	1333 W. Maple Ave., Denver 9
Alexite	Colorado Springs	El Paso	Alexite Engineering Company	Alexander Film Bldg., Colorado Springs
Colorado Springs Brick Plant	Colorado Springs	El Paso	National Clay Products Co.	1224 E. Platte, Colorado Springs
Empire Zinc	Canon City	Fremont	The New Jersey Zinc Company, Empire Zinc Division	160 Front St., New York City 5
Feldspar Grinding Plant	Canon City	Fremont	The Colorado Feldspar Co.	1403 Trenton Trust Bldg., Trenton 8, New Jersey
Rock Wool Plant	Florence	Fremont	Rock Wool Insulating Co.	Box 231, Florence
U. S. Vanadium Corp.	Rifle	Garfield	U. S. Vanadium Corp.	Rifle
Arkansas Valley Smelter	Leadville	Lake	American Smelting & Refining Company	120 Broadway, New York City 5
Cloud City Concentrator	Leadville	Lake	Adolph Sadar and Assoc.	101 Elm St., Leadville
Heavy Media Separation	Leadville	Lake	Ore & Chemical Corp.	Leadville
John Hamm	Carbonate Hill	Lake	John Hamm Mng. & Mlg., Ltd.	Leadville
Leadville Milling Unit	California Gulch	Lake	American Smelting & Refining Co.	120 Broadway, New York City 5
Reduction Plant Vanadium Corp. of America	Naturita	Montrose	Vanadium Corp. of America	420 Lexington Ave., New York City
American No. 1 Flotation	Ouray	Ouray	American Zinc, Lead & Smelting Company	1600 Paul Brown Bldg., St. Louis, Mo.
General Ore Reduction Company, Inc.	Ouray	Ouray	G. A. and R. K. Franz	Ouray
Snell Mill	Alma	Park	Criterion Mining Company	Alma
Mica Grinding Plant	West Pueblo	Pueblo	Western Non-Metallics, Inc.	330 W. D St., Pueblo
United Production	Silverton	San Juan	U. S. Coal Corp.	429 C. A. Johnson Bldg., Denver 2
Cripple Creek Sampler	Globe Hill	Teller	Mines Incorporated	Box 103, Cripple Creek

TUNNELS, DAMS AND ROAD WORK, 1946

Name	County	Location	Company	Address
Adams Tunnel—East Portal	Larimer	Estes Park	S. S. Magoffin, Inc.	Estes Park
Adams Tunnel—West Portal	Grand	Grand Lake	Stiers Construction Co.	2944 Magazine St., St. Louis, Mo.
Blue River Tunnel—East Portal	Park	Near Grant	City and County of Denver	Municipal Bldg., Denver 2
Leadville Drainage Tunnel	Lake	Leadville	U. S. Bureau of Mines	214 New Custom House, Denver
Ram's Horn Tunnel	Larimer	Estes Park	Lowdermilk Bros.	Estes Park
Granby Dam	Grand	Granby	Granby Construction Co.	Granby
Horse Tooth Dam	Larimer	Ft. Collins	U. S. Bureau of Reclamation	New Custom House, Denver
Road Construction	Boulder	Nederland	Platt Rogers, Inc.	Box 173, Nederland
Road Project 300 G	San Juan	Silverton	Colorado Constructors, Inc.	725 W. 39th Ave., Denver 16

OPERATING PLACERS, 1946

Name	County	Location	Operator	Address
Gold Basin	Chaffee	Granite	Goodhope Mining Company	Ray Davis, c/o Davis Mortuary, Pueblo
Dunn and Taylor	Gunnison	Almont	Taylor-Dunn Mining Company	80 So. Bellaire St., Denver 7
Hallenback	Lake	Leadville	C. V. Hallenback	1114 W. 7th Ave., Denver
Cooley Bros. Dredge	Park	Como	Cooley Bros.	Como
South Platte Dredge	Park	Fairplay	The South Platte Dredging Co.	Fairplay
Timberline Dredge	Park	Fairplay	Timberline Dredging Co.	135 So. LaSalle St., Chicago, Illinois

OPERATING OIL SHALE PLANT, 1946

Town	County	Name	Product	Operator	Address
Rifle	Garfield	U. S. Oil Shale Plant	Oil Shale	United States Government	Washington, D. C.

RECEIVED
APR 0 1 1995
STATE PUBLICATIONS
Colorado State Library